

REMARKS

Claim 1 has been amended to incorporate the subject matter of Claim 3. Claim 3 has been canceled. Claims 10, 13 and 14 have been amended to correct their dependencies. Upon entry of this Amendment, which is respectfully requested, Claims 1, 2 and 4-23 will be pending.

Drawings

Applicants kindly request that the Examiner indicate the status of the drawings filed March 7, 2006.

Response to Claim Rejections Under § 102

Claims 1-4, 7, 8 and 16 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by MacFarlane (“Ionic liquids based on imidazolium, ammonium, and pyrrolidinium salts of the dicyanamide ion”, Green Chemistry, 2002). Applicants respectfully traverse.

The present claims are directed to an electrolyte composition comprising ionic liquid and a halogen-based redox pair, wherein the ionic liquid includes dicyanoamide anions as anions.

The Examiner asserts that MacFarlane discloses an iodide redox pair in the General Synthetic Method section. Applicants respectfully disagree. In the General Synthetic Method section, MacFarlane discloses that an electrolyte containing a dicyanamide anion and a pyrrolidinium cation is formed by a reaction between silver dicyanamide and a substituted pyrrolidinium iodide, resulting in the precipitation of silver iodide. MacFarlane further discloses that the precipitated silver iodide is then removed from the electrolyte. Moreover, MacFarlane discloses the complete removal of Γ^- ions. MacFarlane fails to disclose or suggest a redox pair, and more particularly, an electrolyte composition containing a halogen-based redox pair.

Thus, MacFarlane fails to anticipate or render obvious the present claims. Accordingly, withdrawal of the rejection is respectfully requested.

Response to Claim Rejections Under § 103

Claims 5, 6 and 17-23 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over MacFarlane as applied to Claims 1-4, 8, 9 and 16, and further in view of Mikoshiba et al. (U.S. Patent No. 6,384,321).

Claims 21-23 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over MacFarlane in view of Mikoshiba as applied to Claims 5, 6, 10-15, and 17-20, and further in view of Koyanagi et al. (U.S. Patent Application Publication No. 2003/0150485).

Applicants respectfully traverse.

McFarlane discloses at page 445, that impurities such as halides and water can effect properties such as viscosity of the electrolytes. More particularly, the synthetic method disclosed in McFarlane includes the complete removal of any Γ ions and water present as impurities.

In contrast, at col. 5, lines 26-32, Mikoshiba discloses that it is desirable for the electrolyte to contain a reversible redox couple, including Γ . Mikoshiba further discloses at col. 6, lines 21-24, that it is desirable for the electrolyte composition to contain water. Thus, one skilled in the art would not have been motivated to combine the cited references.

Even if one skilled in the art were motivated to combine the cited references, which one would not be, the Γ and water, which are desirable in Mikoshiba, would become impurities in McFarlane. Thus, combining the teaching of Mikoshiba et al. with those of McFarlane would result in modification of the properties of the electrolyte of McFarlane, thereby rendering it unsatisfactory for its originally intended purpose. Moreover, the presently claimed invention would not be obtained.

Koyanagi fails to disclose or suggest a halogen-based redox pair. Thus, even if Koyanagi and Mikoshiba are combined with MacFarlane, the presently claimed invention would not be obtained.

Thus, MacFarlane, Mikoshiba and Koyanagi fail to render obvious the present claims. Accordingly, withdrawal of the rejections is respectfully requested.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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